

DEPARTMENT OF THE INTERIOR

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BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 169

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ALTITUDES IN ALASKA.—GANNETT

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WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1900



UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

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# ALTITUDES IN ALASKA

COMPILED BY

HENRY GANNETT



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1900

# ALBERTUS IN ALBA

THEO. VAN NELLE



W. VAN NELLE  
1881



## LETTER OF TRANSMITTAL.

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DEPARTMENT OF THE INTERIOR,  
UNITED STATES GEOLOGICAL SURVEY,  
*Washington, D. C., February 5, 1900.*

SIR: I have the honor to transmit herewith, for publication as a bulletin, a list of altitudes in Alaska, drawn mainly from the charts and other publications of the United States Coast and Geodetic Survey and the publications of this office.

Very respectfully,

HENRY GANNETT,  
*Geographer.*

Hon. C. D. WALCOTT,  
*Director United States Geological Survey.*

# LETTER OF TRANSMITTAL

TO THE HONORABLE SECRETARY OF THE ARMY  
WASHINGTON, D. C.  
SIR: I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the matter of the proposed purchase of the land in the State of Texas, and in reply to inform you that the same has been forwarded to the proper authorities for their consideration.

Very respectfully,  
Your obedient servant,  
J. M. Smith

JOHN M. SMITH,  
Major, U. S. Army.

# ALTITUDES IN ALASKA.

BY HENRY GANNETT.

Locality.	Authority.	Elevation.
		<i>Fect.</i>
Achilles Mountain.....	U. S. Coast and Geodetic Survey.	3,027
Adakh Island.....	do.....	5,678
Adams Mountains.....	do.....	7,600
Agassiz Mountain.....	do.....	2,241
Agassiz Peak.....	do.....	5,931
Aghik Island (Semidi Islands).....	do.....	250
Aghiyuk Island (Semidi Islands).....	do.....	1,500
Akutan Island (Fox Islands).....	do.....	3,888
Alikhsemit Island (Semidi Islands).....	do.....	300
Amagat Island.....	do.....	1,900
Amak Island.....	do.....	1,682
Amatignak Island.....	do.....	1,921
Ambler Peak.....	do.....	3,058
Amlia Island.....	do.....	1,900
Amukta Island.....	do.....	3,738
Ancon Peak (Woronkofski Island).....	do.....	3,300
Anowik Island (Semidi Islands).....	do.....	650
Anvil Mountain (Annette Island).....	do.....	2,157
Arkell Lake.....	do.....	2,700
Arm Mountain.....	do.....	2,177
Arthur Peak.....	do.....	3,434
Atka Island.....	do.....	4,988
Augustine Island.....	do.....	<sup>1</sup> 3,000
Avatanak (Fox Islands).....	do.....	1,207
Bainbridge Peak.....	do.....	3,467
Bald Ridge (Annette Island).....	do.....	2,241
Barlow Mountain (Mansfield Peninsula).....	do.....	2,142
Bay Point Knoll.....	do.....	2,108
Beauclerc Peak.....	do.....	2,500
Behm Mountain.....	do.....	2,867
Bell Island.....	do.....	2,500
Bence Mountain.....	U. S. Geological Survey.....	4,800
Berry Knoll.....	U. S. Coast and Geodetic Survey.	894
Berry Peak (Wrangell Island).....	do.....	2,500
Bessie Peak.....	do.....	4,130
Between Mountain.....	do.....	1,526
Big Diomed Island (Bering Strait).....	do.....	1,759
Big Mountain.....	do.....	8,750
Blackburn, Mount.....	do.....	12,500
Black Crag.....	do.....	5,895
Black Mountain.....	do.....	1,883
Black Mountain.....	do.....	5,130
Black, Mount.....	do.....	12,500
Black Thorn.....	do.....	4,010

<sup>1</sup> Approximate.

Locality.	Authority.	Elevation.
		<i>Feet.</i>
Bobrof Island .....	U. S. Coast and Geodetic Survey.	1, 392
Bohemian Range .....	do .....	{ 2, 144 2, 589 1, 784
Boundary Mountain .....	do .....	4, 805
Buldir Island .....	do .....	1, 145
Butler Peak .....	do .....	1, 153
Calder, Mount (Prince of Wales Island) .....	do .....	3, 371
Campbell Mountains .....	do .....	5, 500
Cane Mountain .....	do .....	6, 100
Carlisle Island (Islands of Four Mountains) .....	do .....	7, 500
Carter, Mount .....	U. S. Geological Survey .....	4, 700
Cascade .....	U. S. Coast and Geodetic Survey.	3, 900
Case, Mount .....	do .....	5, 510
Chapeau Mountain .....	do .....	2, 000
Chenango Mountain (Annette Island) .....	do .....	2, 987
Chichagof Peak .....	do .....	2, 600
Chilkat Pass .....	do .....	3, 100
Chilkoot Pass .....	do .....	3, 500
Chipp Peak .....	do .....	2, 532
Chisana Mountain .....	U. S. Geological Survey .....	3, 200
Chowiet Island .....	U. S. Coast and Geodetic Survey.	1, 200
Chugatch Mountains .....	U. S. Geological Survey .....	{ 5, 000 to 6, 000
Chugul Island .....	U. S. Coast and Geodetic Survey.	4, 300
Clara, Mount .....	do .....	6, 000
Cleveland, Mount (Islands of Four Mountains) .....	do .....	8, 156
Coghlan Island .....	do .....	436
Cone Mountain .....	do .....	2, 718
Cook, Mount .....	do .....	13, 758
Copper Mountain Range .....	U. S. Geological Survey .....	{ 4, 000 to 6, 000
Cosmos Range .....	U. S. Coast and Geodetic Survey.	3, 279
Cove Hill .....	do .....	619
Cranberry Peak .....	U. S. Geological Survey .....	5, 200
Crater Lake (Chilkoot Pass) .....	U. S. Coast and Geodetic Survey.	3, 500
Crater Mountain .....	do .....	633
Crillon, Mount .....	do .....	15, 900
Cross Mountain .....	do .....	2, 597
D'Agelet, Mount .....	do .....	9, 708
Dahlgren Peak .....	do .....	3, 502
Dana Peak .....	do .....	4, 260
Davison Mountain (Annette Island) .....	do .....	2, 652
DeLong Peak .....	do .....	3, 737
Devils Thumb .....	do .....	9, 062
Dome Mountain .....	do .....	2, 100
Dome Peak .....	do .....	6, 500
Drum, Mount .....	do .....	13, 300
Dry Island .....	do .....	2, 460
Duke Hill (Duke Island) .....	do .....	540
Du Relle, Mount .....	U. S. Geological Survey .....	4, 300
Dyke Mountain .....	do .....	6, 700
Eads Peak .....	U. S. Coast and Geodetic Survey.	4, 636
Eagle Crag .....	do .....	5, 705

Locality.	Authority.	Elevation.
		<i>Feet.</i>
East Peak .....	U. S. Geological Survey .....	4,900
Edgumbe, Mount .....	U. S. Coast and Geodetic Survey.	2,800
Elbow Mountain .....	do .....	4,111
Emmerich, Mount .....	do .....	6,940
Entry Peak (Prince of Wales Island) .....	do .....	1,400
Ericson Peak .....	do .....	4,296
Etolin, Mount .....	do .....	3,778
Evans, Mount .....	U. S. Geological Survey .....	5,400
Everett Peak .....	U. S. Coast and Geodetic Survey.	3,645
Fairweather, Mount .....	do .....	15,292
Fanshaw, Mount .....	do .....	2,818
Fawn Mountain .....	do .....	2,112
Fighting John Peak .....	do .....	5,078
Figure Four Mountain .....	U. S. Geological Survey .....	2,200
Fillmore Peak .....	U. S. Coast and Geodetic Survey.	3,633
Flag Hill .....	U. S. Geological Survey .....	1,200
Flat Mountain .....	U. S. Coast and Geodetic Survey.	1,800
Fortymile Dome .....	U. S. Geological Survey .....	3,900
Fox Hill .....	U. S. Coast and Geodetic Survey.	563
Francis, Mount .....	U. S. Geological Survey .....	4,800
Franklin Peaks .....	U. S. Coast and Geodetic Survey.	4,314
Do .....	do .....	3,909
Fulton Peak .....	do .....	3,252
Gable Mountain .....	do .....	4,490
Gap Mountain .....	do .....	3,400
Gareloi Island .....	do .....	5,334
Garrett Peak .....	U. S. Geological Survey .....	5,700
Glacier Mountain .....	U. S. Coast and Geodetic Survey.	4,769
Glacier Mountain .....	U. S. Geological Survey .....	6,000
Golden Horn .....	U. S. Coast and Geodetic Survey.	6,400
Grant Peak .....	do .....	5,291
Gray Peak .....	do .....	4,694
Great Sitkin Island .....	do .....	5,033
Haeckel Hill .....	do .....	3,900
Hall Peak .....	do .....	3,726
Hamilton, Mount .....	U. S. Geological Survey .....	2,000
Hancock Peak .....	U. S. Coast and Geodetic Survey.	3,851
Harbor Peak .....	do .....	2,200
Harold, Mount .....	do .....	3,430
Harrison, Mount .....	do .....	6,955
Harry Saddle .....	do .....	2,088
Hawthorne Peak .....	do .....	4,021
Hayes, Mount .....	U. S. Geological Survey .....	14,500
Helmick Mountain .....	do .....	2,000
Herbert Island (Islands of Four Mountains) .....	U. S. Coast and Geodetic Survey.	5,291
Hog Back .....	do .....	300
Horn Mountain .....	do .....	2,929
Howard, Mount (Kuiu Island) .....	do .....	2,340
Hump Knoll .....	do .....	3,116
Hunt Peak .....	do .....	3,494
Iliamna Peak .....	do .....	12,066
Insignificant Ridge (Annette Island) .....	do .....	2,987
Irving Peak .....	do .....	2,169

Locality.	Authority.	Elevation.
		<i>Fect.</i>
Iskoot Mountain .....	U. S. Coast and Geodetic Survey.	4, 799
Jade Mountains .....	do .....	3, 500
Jamestown Peak .....	do .....	2, 940
Janesville Mountain (Annette Island) .....	do .....	2, 620
Jenkins Peak .....	do .....	3, 292
Jubilee Mountain .....	do .....	6, 380
Judy Hill .....	do .....	631
Kane Peak .....	do .....	3, 292
Kasatocki Island .....	do .....	1, 018
Kateekhuk Island .....	do .....	1, 200
Kate, Mount .....	U. S. Geological Survey .....	4, 600
Kates Needle .....	U. S. Coast and Geodetic Survey.	9, 954
Katété Mountain .....	do .....	4, 170
Keelikhtagikh Island (Semidi Islands) .....	do .....	750
Kimball, Mount .....	U. S. Geological Survey .....	10, 000
Knob .....	U. S. Coast and Geodetic Survey.	4, 250
Koniuji Island (Aleutian Islands) .....	do .....	1, 113
Korovin Volcano (Atka Island) .....	do .....	4, 852
Kusilyak Mountain .....	do .....	2, 449
Kyska Island .....	do .....	3, 700
Landslide .....	do .....	4, 798
Lansdowne, Mount .....	do .....	6, 140
La Perouse, Mount .....	do .....	10, 740
Laura, Mount .....	do .....	7, 527
Lazaro, Mount (Duke Island) .....	do .....	1, 767
Leadville Mountain .....	do .....	1, 797
Lincoln Peak .....	do .....	4, 894
Little Sitkin Island (Aleutian Islands) .....	do .....	3, 585
Lituya Mountain .....	do .....	11, 832
Lockwood Peak .....	do .....	3, 510
Logan, Mount .....	do .....	9, 000
Longfellow Peak .....	do .....	2, 955
Lorne, Mount .....	do .....	6, 400
McDonough, Peak .....	do .....	2, 873
McGrath, Mount .....	do .....	6, 179
McKinley, Mount .....	U. S. Geological Survey .....	20, 464
McMillan Mountains .....	U. S. Coast and Geodetic Survey.	3, 500
Madison Peak .....	do .....	2, 507
Makushin Mountain .....	do .....	5, 474
Marr, Mount .....	U. S. Coast and Geodetic Survey.	2, 447
Marshall Mountain .....	U. S. Geological Survey .....	5, 200
Marshall Peak .....	U. S. Coast and Geodetic Survey.	3, 017
Maury Peak .....	do .....	5, 566
Mayer Peak .....	U. S. Geological Survey .....	6, 100
Meiklejohn Pass .....	do .....	4, 500
Mentasta Pass .....	do .....	2, 300
Michie Mountain .....	U. S. Coast and Geodetic Survey.	5, 540
Miners Range .....	do .....	4, 000 to 4, 500
Missionary Ridge .....	do .....	2, 450 2, 650 2, 715
Moosehorn Mountain .....	U. S. Geological Survey .....	2, 851 5, 000



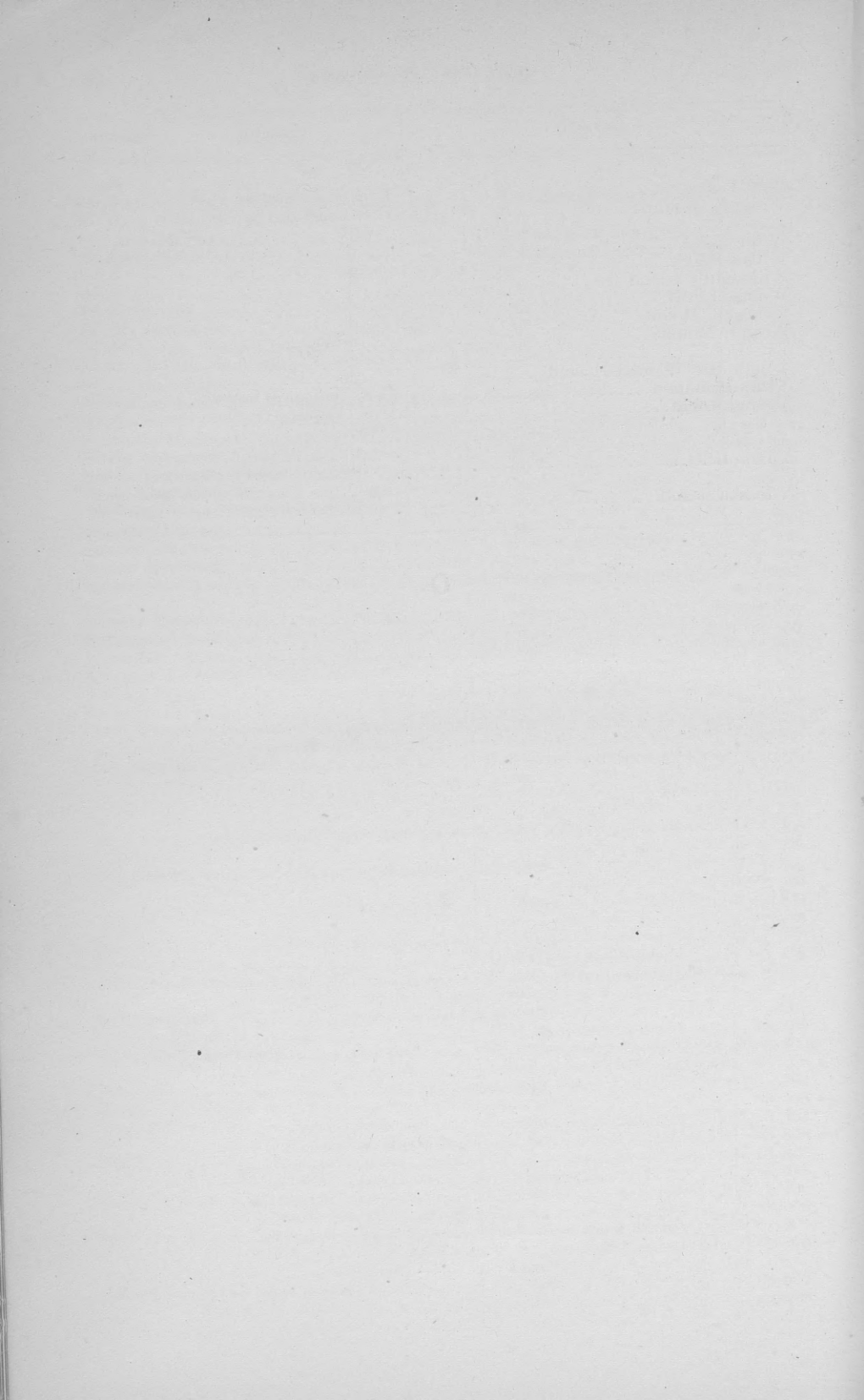
Locality.	Authority.	Elevation.
		<i>Fect.</i>
Moss Mountain.....	U. S. Coast and Geodetic Survey.	1,631
Mound Hill.....	do.....	1,956
Muckacharne.....	do.....	1,600
Mud Glacier.....	do.....	5,426
Nakat Mountain.....	do.....	2,921
Navy Peak.....	do.....	3,734
Nichols Hills.....	do.....	250
North Quadra Mountain.....	do.....	2,353
Notch Mountain.....	do.....	1,879
Oratia Mount.....	U. S. Geological Survey.....	6,000
Ourand Mount.....	do.....	4,300
Parsons Peak.....	U. S. Coast and Geodetic Survey.	5,500
Patterson Peak.....	do.....	4,746
Pelly Mountains.....	do.....	5,000 to 7,000
Pinnacle.....	do.....	8,346
Pogumnoi Volcano (Unimak Island).....	do.....	5,523
Porter Peak.....	do.....	4,798
Portland Island.....	do.....	206
Powell Knob.....	do.....	2,655
Purple Mountain (Annette Island).....	do.....	2,447
Putnam Peak.....	do.....	3,887
Pyramid Peak.....	do.....	4,068
Quay Peak (Chugatch Mountains).....	U. S. Geological Survey.....	5,000
Red Bay Mountain.....	U. S. Coast and Geodetic Survey.	2,843
Red Mountain.....	do.....	2,404
Reverdy Mountains.....	do.....	5,485
Rich Mountain.....	U. S. Geological Survey.....	5,000
Ripinski, Mount.....	U. S. Coast and Geodetic Survey.	4,060
Romig, Mount.....	U. S. Geological Survey.....	2,500
Rootck Island.....	U. S. Coast and Geodetic Survey.	3,888
Roundabout Mountain.....	U. S. Geological Survey.....	1,000
Round Hill.....	U. S. Coast and Geodetic Survey.	1,647
St. Elias, Mount.....	do.....	18,024
St. Michaels Mountain.....	do.....	472
St. Paul (one of Pribilof Islands).....	do.....	633
Sajaca (Tanaga Island).....	do.....	7,103
Sanford, Mount.....	U. S. Geological Survey.....	14,000
Sannak Peak (Sannak Island).....	U. S. Coast and Geodetic Survey.	1,850
Saranac Peak.....	do.....	2,683
Seattle, Mount.....	do.....	10,000
Seguam Island.....	do.....	2,098
Semichi Islands.....	do.....	818
Seminow Hills.....	do.....	3,500 to 4,000
Sentinel Peak.....	do.....	4,250
Seward Mountains.....	do.....	4,000
Sharp Peak.....	U. S. Geological Survey.....	5,900
Shed Mountain.....	U. S. Coast and Geodetic Survey.	2,620
Shell Hills.....	U. S. Geological Survey.....	1,500 to 1,700

<sup>1</sup> Approximate.

Locality.	Authority.	Elevation.
		<i>Feet.</i>
Shishaldin Volcano (Unimak Island) .....	U. S. Coast and Geodetic Survey.	8, 952
Simpson, Mount .....	U. S. Geological Survey .....	5, 200
Simpson Mountains .....	U. S. Coast and Geodetic Survey.	6, 500
Snow Cap .....	do .....	5, 078
Snow Tower .....	do .....	7, 100
Snowy Mountain .....	do .....	5, 577
South Island (Semidi Islands) .....	do .....	250
South Quadra Mountain .....	do .....	1, 764
Spirit Mountain .....	U. S. Geological Survey .....	3, 000
Split Top Mountain .....	do .....	2, 100
Spuhn Island .....	do .....	246
Stephens Mountain .....	do .....	331
Stripe Mountain .....	do .....	2, 300
Stuart Mountain (Stuart Island) .....	do .....	483
Sugar Loaf Mountain .....	do .....	5, 259
Sukhlikh Island (Semidi Islands) .....	do .....	200
Summit Glaciers .....	do .....	5, 700
Summit Peaks .....	U. S. Geological Survey .....	5, 800
Sunny Mountain .....	do .....	4, 400
Sunset Island .....	U. S. Coast and Geodetic Survey.	404
Survey Mountains .....	do .....	2, 916
Sushitna, Mount .....	do .....	5, 500
Taku Mountain .....	do .....	2, 170
Tamgas Mountain (Annette Island) .....	do .....	3, 684
Tanaga Island .....	do .....	6, 975
Tangent Peak .....	do .....	2, 449
Tent Mountain .....	do .....	7, 100
Terrace Mountain .....	U. S. Geological Survey .....	6, 000
The Nipples .....	U. S. Coast and Geodetic Survey.	2, 900
		1, 021
		1, 325
		1, 308
		1, 369
The Sisters .....	do .....	1, 555
		1, 680
		1, 593
		1, 589
		1, 350
Thomas, Mount .....	U. S. Geological Survey .....	5, 400
Thunder Mountain .....	U. S. Coast and Geodetic Survey.	3, 080
Tigalda Island .....	do .....	1, 207
Tillman, Mount .....	U. S. Geological Survey .....	13, 300
Tohtankella Mountain .....	U. S. Coast and Geodetic Survey.	3, 000
Trout Hill .....	do .....	893
Tsesiuh Mountains .....	do .....	3, 500
Turner, Mount .....	do .....	5, 953
Twin Peaks .....	do .....	6, 638
Vancouver, Mount .....	do .....	15, 666
Verstovaia, Mount .....	do .....	3, 216
Villard, Mount .....	do .....	5, 100
Vsevidof Volcano (Umnak Island) .....	do .....	8, 000
Wagner, Lake .....	U. S. Geological Survey .....	1, 900
Warm Spring Mountain .....	U. S. Coast and Geodetic Survey.	3, 370
Washington Peak .....	do .....	3, 557
Waterfall Peak .....	do .....	3, 403
Webster Peak .....	do .....	3, 254



Locality.	Authority.	Elevation.
		<i>Feet.</i>
West Peak .....	U. S. Geological Survey .....	5, 600
Whipple, Mount .....	U. S. Coast and Geodetic Survey.	6, 033
White Pass .....	do .....	2, 886
Wilkes Peak .....	do .....	3, 156
Willoughby Island .....	do .....	1, 545
Wrangell Peak .....	do .....	3, 800
Wrangell, Mount .....	do .....	17, 500
Wright, Mount .....	do .....	4, 944
Do .....	do .....	6, 300
Yellow Hill (Annette Island) .....	do .....	554
Yenlo Mountain .....	U. S. Geological Survey .....	4, 000
Young, Mount .....	U. S. Coast and Geodetic Survey.	5, 260
Yukon Hills .....	do .....	{ 1, 000 to
Yunaska Island .....	do .....	
		2, 500
		2, 864



## ADVERTISEMENT.

[Bulletin 169.]

The statute approved March 3, 1879, establishing the United States Geological Survey, contains the following provisions:

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classification of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization; and the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

Except in those cases in which an extra number of any special memoir or report has been supplied to the Survey by resolution of Congress or has been ordered by the Secretary of the Interior, this office has no copies for gratuitous distribution.

### ANNUAL REPORTS.

I. First Annual Report of the United States Geological Survey, by Clarence King. 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.

II. Second Annual Report of the United States Geological Survey, 1880-'81, by J. W. Powell. 1882. 8°. iv, 588 pp. 62 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881-'82, by J. W. Powell. 1883. 8°. xviii, 564 pp. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882-'83, by J. W. Powell. 1884. 8°. xxxii, 473 pp. 85 pl. and maps.

V. Fifth Annual Report of the United States Geological Survey, 1883-'84, by J. W. Powell. 1885. 8°. xxxvi, 469 pp. 58 pl. and maps.

VI. Sixth Annual Report of the United States Geological Survey, 1884-'85, by J. W. Powell. 1885. 8°. xxix, 570 pp. 65 pl. and maps.

VII. Seventh Annual Report of the United States Geological Survey, 1885-'86, by J. W. Powell. 1888. 8°. xx, 656 pp. 71 pl. and maps.

VIII. Eighth Annual Report of the United States Geological Survey, 1886-'87, by J. W. Powell. 1889. 8°. 2 pt. xix, 474, xii pp. 53 pl. and maps; 1 p.l., 475-1063 pp. 54-76 pl. and maps.

IX. Ninth Annual Report of the United States Geological Survey, 1887-'88, by J. W. Powell. 1889. 8°. xiii, 717 pp. 88 pl. and maps.

X. Tenth Annual Report of the United States Geological Survey, 1888-'89, by J. W. Powell. 1890. 8°. 2 pt. xv, 774 pp., 98 pl. and maps; viii, 123 pp.

XI. Eleventh Annual Report of the United States Geological Survey, 1889-'90, by J. W. Powell. 1891. 8°. 2 pt. xv, 757 pp., 66 pl. and maps; ix, 351 pp., 30 pl.

XII. Twelfth Annual Report of the United States Geological Survey, 1890-'91, by J. W. Powell. 1891. 8°. 2 pt. xiii, 675 pp., 53 pl. and maps; xviii, 576 pp., 146 pl. and maps.

XIII. Thirteenth Annual Report of the United States Geological Survey, 1891-'92, by J. W. Powell. 1893. 8°. 3 pt. vii, 240 pp., 2 maps; x, 372 pp., 105 pl. and maps; xi, 486 pp., 77 pl. and maps.

XIV. Fourteenth Annual Report of the United States Geological Survey, 1892-'93, by J. W. Powell. 1893. 8°. 2 pt. vi, 321 pp., 1 pl.; xx, 597 pp., 74 pl.

XV. Fifteenth Annual Report of the United States Geological Survey, 1893-'94, by J. W. Powell. 1895. 8°. xiv, 755 pp. 48 pl.

XVI. Sixteenth Annual Report of the United States Geological Survey, 1894-'95, by Charles D. Walcott, Director. 1895. (Part I, 1896.) 8°. 4 pt. xxii, 910 pp., 117 pl. and maps; xix, 598 pp., 43 pl. and maps; xv, 646 pp., 23 pl.; xix, 735 pp., 6 pl.

XVII. Seventeenth Annual Report of the United States Geological Survey, 1895-'96, Charles D. Walcott, Director. 1896. 8°. 3 pt. in 4 vol. xxii, 1076 pp., 67 pl. and maps; xxv, 864 pp., 113 pl. and maps; xxiii, 542 pp., 8 pl. and maps; iii, 543-1058 pp., 9-13 pl.

XVIII. Eighteenth Annual Report of the United States Geological Survey, 1896-'97, Charles D. Walcott, Director. 1897. (Parts II and III, 1898.) 8°. 5 pt. in 6 vol. 440 pp., 4 pl. and maps; v, 653 pp., 105 pl. and maps; v, 861 pp., 118 pl. and maps; x, 756 pp., 102 pl. and maps; xii, 642 pp., 1 pl.; 643-1400 pp.

XIX. Nineteenth Annual Report of the United States Geological Survey, 1897-'98, Charles D. Walcott, Director. 1898. (Parts II, III, and V, 1899.) 8°. 6 pt. in 7 vol. 422 pp., 2 maps; v, 958 pp., 172 pl. and maps; v, 785 pp., 99 pl. and maps; viii, 814 pp., 118 pl. and maps; xvii, 400 pp., 110 pl. and maps; viii, 651 pp., 11 pl.; viii, 706 pp.

XX. Twentieth Annual Report of the United States Geological Survey, 1898-'99, Charles D. Walcott, Director. 1899. 8°. 7 pt. in 8 vol. 551 pp., 2 pl.; v, 953 pp., 193 pl. and maps; v, 595 pp., 78 pl. and maps; vii, 660 pp., 75 pl. and maps; xix, 498 pp., 159 pl. and maps; viii, 616 pp.; xi, 804 pp., 1 pl.; v, 509 pp., 38 pl. and maps.

#### MONOGRAPHS.

I. Lake Bonneville, by Grove Karl Gilbert. 1890. 4°. xx, 438 pp. 51 pl. 1 map. Price \$1.50.

II. Tertiary History of the Grand Cañon District, with Atlas, by Clarence E. Dutton, Capt., U. S. A. 1882. 4°. xiv, 264 pp. 42 pl. and atlas of 24 sheets folio. Price \$10.00.

III. Geology of the Comstock Lode and the Washoe District, with Atlas, by George F. Becker. 1882. 4°. xv, 422 pp. 7 pl. and atlas of 21 sheets folio. Price \$11.00.

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150. The Educational Series of Rock Specimens Collected and Distributed by the United States Geological Survey, by Joseph Silas Diller. 1898. 8°. 400 pp. 47 pl. Price 25 cents.
151. The Lower Cretaceous Gryphaeas of the Texas Region, by R. T. Hill and T. Wayland Vaughan. 1898. 8°. 139 pp. 35 pl. Price 15 cents.
152. A Catalogue of the Cretaceous and Tertiary Plants of North America, by F. H. Knowlton. 1898. 8°. 247 pp. Price 20 cents.
153. A Bibliographic Index of North American Carboniferous Invertebrates, by Stuart Weller. 1898. 8°. 653 pp. Price 35 cents.
154. A Gazetteer of Kansas, by Henry Gannett. 1898. 8°. 246 pp. 6 pl. Price 20 cents.

155. Earthquakes in California in 1896 and 1897, by Charles D. Perrine, Assistant Astronomer in Charge of Earthquake Observations at the Lick Observatory. 1898. 8°. 47 pp. Price 5 cents.
156. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy or the Year 1897, by Fred Boughton Weeks. 1898. 8°. 130 pp. Price 15 cents.
157. The Gneisses, Gabbro-Schists, and Associated Rocks of Southwestern Minnesota, by Christopher Webber Hall. 1899. 8°. 160 pp. 27 pl. Price 45 cents.
158. The Moraines of Southeastern South Dakota and their Attendant Deposits, by James Edward Todd. 1899. 8°. 171 pp. 27 pl. Price 25 cents.
159. The Geology of Eastern Berkshire County, Massachusetts, by B. K. Emerson. 1899. 8°. 139 pp. 9 pl. Price 20 cents.
160. A Dictionary of Altitudes in the United States (Third Edition), compiled by Henry Gannett. 1899. 8°. 775 pp. Price 40 cents.
161. Earthquakes in California in 1898, by Charles D. Perrine, Assistant Astronomer in Charge of Earthquake Observations at the Lick Observatory. 1899. 8°. 31 pp. 1 pl. Price 5 cents.
162. Bibliography and Index of North American Geology, Paleontology, Petrology, and Mineralogy for the Year 1898, by Fred Boughton Weeks. 1899. 8°. 163 pp. Price 15 cents.
163. Flora of the Montana Formation, by Frank Hall Knowlton. 1900. 8°. 118 pp. Price 15 cents.
164. Reconnaissance in the Rio Grande Coal Fields of Texas, by Thomas Wayland Vaughan, including a Report on Igneous Rocks from the San Carlos Coal Field, by E. C. E. Lord. 1900. 8°. 100 pp. 11 pl. and maps. Price 20 cents.
165. Contributions to the Geology of Maine, by Henry S. Williams and Herbert E. Gregory. 1900. 8°. 212 pp. 14 pl. Price 25 cents.
166. A Gazetteer of Utah, by Henry Gannett. 1900. 8°. 43 pp. 1 map. Price 15 cents.
167. Contributions to Chemistry and Mineralogy from the Laboratory of the United States Geological Survey, Frank W. Clarke, Chief Chemist. 1900. 8°. 166 pp. Price 15 cents.
168. Analyses of Rocks, Laboratory of the United States Geological Survey, 1880 to 1899, tabulated by F. W. Clarke, Chief Chemist. 1900. 8°. 308 pp. Price 20 cents.
169. Altitudes in Alaska, by Henry Gannett. 1900. 8°. 13 pp. Price 5 cents.

*In preparation:*

170. Idaho-Montana Boundary Line, by Richard Urquhart Goode.
- Bibliography and Catalogue of the Fossil Vertebrata of North America, by Oliver Perry Hay.

#### WATER-SUPPLY AND IRRIGATION PAPERS.

By act of Congress approved June 11, 1896, the following provision was made:

*"Provided, That hereafter the reports of the Geological Survey in relation to the gauging of streams and to the methods of utilizing the water resources may be printed in octavo form, not to exceed one hundred pages in length and five thousand copies in number; one thousand copies of which shall be for the official use of the Geological Survey, one thousand five hundred copies shall be delivered to the Senate, and two thousand five hundred copies shall be delivered to the House of Representatives, for distribution."*

Under this law the following papers have been published:

1. Pumping Water for Irrigation, by Herbert M. Wilson. 1896. 8°. 57 pp. 9 pl.
2. Irrigation near Phoenix, Arizona, by Arthur P. Davis. 1897. 8°. 97 pp. 31 pl.
3. Sewage Irrigation, by George W. Rafter. 1897. 8°. 100 pp. 4 pl.
4. A Reconnaissance in Southeastern Washington, by Israel Cook Russell. 1897. 8°. 96 pp. 7 pl.
5. Irrigation Practice on the Great Plains, by Elias Branson Cowgill. 1897. 8°. 39 pp. 12 pl.
6. Underground Waters of Southwestern Kansas, by Erasmuth Haworth. 1897. 8°. 65 pp. 12 pl.
7. Seepage Waters of Northern Utah, by Samuel Fortier. 1897. 8°. 50 pp. 3 pl.
8. Windmills for Irrigation, by E. C. Murphy. 1897. 8°. 49 pp. 8 pl.
9. Irrigation near Greeley, Colorado, by David Boyd. 1897. 8°. 90 pp. 21 pl.
10. Irrigation in Mesilla Valley, New Mexico, by F. C. Barker. 1898. 8°. 51 pp. 11 pl.
11. River Heights for 1896, by Arthur P. Davis. 1897. 8°. 100 pp.
12. Underground waters of Southeastern Nebraska, by N. H. Darton. 1898. 8°. 56 pp. 21 pl.
13. Irrigation Systems in Texas, by William Ferguson Hutson. 1898. 8°. 67 pp. 10 pl.
14. New Tests of Pumps and Water-Lifts used in Irrigation, by O. P. Hood. 1898. 8°. 91 pp. 1 pl.
15. Operations at River Stations, 1897, Part I. 1898. 8°. 100 pp.
16. Operations at River Stations, 1897, Part II. 1898. 8°. 101-200 pp.
17. Irrigation near Bakersfield, California, by C. E. Grunsky. 1898. 8°. 96 pp. 16 pl.
18. Irrigation near Fresno, California, by C. E. Grunsky. 1898. 8°. 94 pp. 14 pl.
19. Irrigation near Merced, California, by C. E. Grunsky. 1899. 8°. 59 pp. 11 pl.
20. Experiments with Windmills, by T. O. Perry. 1899. 8°. 97 pp. 12 pl.
21. Wells of Northern Indiana, by Frank Leverett. 1899. 8°. 82 pp. 2 pl.
22. Sewage Irrigation, Part II, by George W. Rafter. 1899. 8°. 100 pp. 7 pl.
23. Water-right Problems of the Bighorn Mountains, by Elwood Mead. 1899. 8°. 62 pp. 7 pl.
24. Water Resources of the State of New York, Part I, by G. W. Rafter. 1899. 8°. 99 pp. 13 pl.

25. Water Resources of the State of New York, Part II, by G. W. Rafter. 1899. 8°. 101-200 pp. 12 pl.
26. Wells of Southern Indiana (Continuation of No. 21), by Frank Leverett. 1899. 8°. 64 pp.
27. Operations at River Stations for 1898, Part I. 1899. 8°. 100 pp.
28. Operations at River Stations for 1898, Part II. 1899. 8°. 101-200 pp.
29. Wells and Windmills in Nebraska, by Erwin H. Barbour. 1899. 8°. 85 pp. 27 pl.
30. Water Resources of the Lower Peninsula of Michigan, by Alfred C. Lane. 1899. 8°. 97 pp. 7 pl.
31. Lower Michigan Mineral Waters, by Alfred C. Lane. 1899. 8°. 97 pp. 4 pl.
32. Water Resources of Puerto Rico, by Herbert M. Wilson. 1899. 8°. 48 pp. 17 pl.
33. Storage of Water on Gila River, Arizona, by Joseph B. Lippincott. 1900. 8°. 98 pp. 33 pl.
34. Geology and water resources of SE. South Dakota, by J. E. Todd. 1900. 8°. 34 pp. 19 pls.

*In preparation:*

35. Operations at River Stations, 1899, Part I.
36. Operations at River Stations, 1899, Part II.
37. Operations at River Stations, 1899, Part III.
38. Operations at River Stations, 1899, Part IV.
39. Operations at River Stations, 1899, Part V.

### TOPOGRAPHIC MAP OF THE UNITED STATES.

When, in 1882, the Geological Survey was directed by law to make a geologic map of the United States, there was in existence no suitable topographic map to serve as a base for the geologic map. The preparation of such a topographic map was therefore immediately begun. About one-fifth of the area of the country, excluding Alaska, has now been thus mapped. The map is published in atlas sheets, each sheet representing a small quadrangular district, as explained under the next heading. The separate sheets are sold at 5 cents each when fewer than 100 copies are purchased, but when they are ordered in lots of 100 or more copies, whether of the same sheet or of different sheets, the price is 2 cents each. The mapped areas are widely scattered, nearly every State being represented. About 900 sheets have been engraved and printed; they are tabulated by States in the Survey's "List of Publications," a pamphlet which may be had on application.

The map sheets represent a great variety of topographic features, and with the aid of descriptive text they can be used to illustrate topographic forms. This has led to the projection of an educational series of topographic folios, for use wherever geography is taught in high schools, academies, and colleges. Of this series the first two folios have been issued, viz:

1. Physiographic types, by Henry Gannett, 1898, folio, consisting of the following sheets and 4 pages of descriptive text: Fargo (N. Dak.-Minn.), a region in youth; Charleston (W. Va.), a region in maturity; Caldwell (Kans.), a region in old age; Palmyra (Va.), a rejuvenated region; Mount Shasta (Cal.), a young volcanic mountain; Eagle (Wis.), moraines; Sun Prairie (Wis.), drumlins; Donaldsonville (La.), river flood plains; Boothbay (Me.), a fiord coast; Atlantic City (N. J.), a barrier-beach coast.

2. Physiographic types, by Henry Gannett, 1900, folio, consisting of the following sheets and 11 pages of descriptive text: Norfolk (Va.-N. C.), a coast swamp; Marshall (Mo.), a graded river; Lexington (Nebr.), an overloaded stream; Harrisburg (Pa.), Appalachian ridges; Poteau Mountain (Ark.-Ind. T.), Ozark ridges; Marshall (Ark.), Ozark Plateau; West Denver (Colo.), hogbacks; Mount Taylor (N. Mex.), volcanic peaks, plateaus, and necks; Cucamonga (Cal.), alluvial cones; Crater Lake special (Oreg.), a crater.

### GEOLOGIC ATLAS OF THE UNITED STATES.

The Geologic Atlas of the United States is the final form of publication of the topographic and geologic maps. The atlas is issued in parts, or folios, progressively as the surveys are extended, and is designed ultimately to cover the entire country.

Under the plan adopted the entire area of the country is divided into small rectangular districts (designated *quadrangles*), bounded by certain meridians and parallels. The unit of survey is also the unit of publication, and the maps and descriptions of each rectangular district are issued as a folio of the Geologic Atlas.

Each folio contains topographic, geologic, economic, and structural maps, together with textual descriptions and explanations, and is designated by the name of a principal town or of a prominent natural feature within the district.

Two forms of issue have been adopted, a "library edition" and a "field edition." In both the sheets are bound between heavy paper covers, but the library copies are permanently bound, while the sheets and covers of the field copies are only temporarily wired together.

Under the law a copy of each folio is sent to certain public libraries and educational institutions. The remainder are sold at 25 cents each, except such as contain an unusual amount of matter, which are priced accordingly. Prepayment is obligatory. The folios ready for distribution are here listed.

No.	Name of sheet.	State.	Limiting meridians.	Limiting parallels.	Area, in square miles.	Price, in cents.
1	Livingston .....	Montana..	110°-111°	45°-46°	3,354	25
2	Ringgold .....	Georgia..	85°-85° 30'	34° 30'-35°	980	25
3	Placerville .....	Tennessee	120° 30'-121°	38° 30'-39°	932	25
4	Kingston α .....	California	84° 30'-85°	35° 30'-36°	969	25
5	Sacramento .....	Tennessee	121°-121° 30'	38° 30'-39°	932	25
6	Chattanooga .....	California	85°-85° 30'	35°-35° 30'	975	25
7	Pikes Peak α .....	Tennessee	105°-105° 30'	38° 30'-39°	932	25
8	Sewanee .....	Colorado..	85° 30'-86°	35°-35° 30'	975	25
9	Anthracite-Crested Butte.	Tennessee	106° 45'-107° 15'	38° 45'-39°	465	50
10	Harpers Ferry .....	Virginia..	77° 30'-78°	39°-39° 30'	925	25
11	Jackson .....	West Va..	120° 30'-121°	38°-38° 30'	938	25
12	Estillville .....	Maryland.	82° 30'-83°	36° 30'-37°	957	25
13	Fredericksburg .....	Kentucky.	77°-77° 30'	38°-38° 30'	938	25
14	Staunton .....	Tennessee	79°-79° 30'	38°-38° 30'	938	25
15	Lassen Peak .....	Virginia..	121°-122°	40°-41°	3,634	25
16	Knoxville .....	California	83° 30'-84°	35° 30'-36°	925	25
17	Marysville .....	Tennessee	121° 30'-122°	39°-39° 30'	925	25
18	Smartsville .....	N. Carolina	121°-121° 30'	39°-39° 30'	925	25
19	Stevenson .....	California	85° 30'-86°	34° 30'-35°	980	25
20	Cleveland .....	Alabama..	84° 30'-85°	35° 30'-36°	975	25
21	Pikeville .....	Tennessee	85°-85° 30'	35° 30'-36°	969	25
22	McMinnville .....	Tennessee	85° 30'-86°	35° 30'-36°	969	25
23	Nomini .....	Maryland.	76° 30'-77°	38°-38° 30'	938	25
24	Three Forks .....	Virginia..	111°-112°	45°-46°	3,354	50
25	Loudon .....	Montana..	84°-84° 30'	35° 30'-36°	969	25
26	Pocahontas .....	Tennessee	81°-81° 30'	37°-37° 30'	951	25
27	Morristown .....	Virginia..	83°-83° 30'	37°-37° 30'	963	25
28	Piedmont .....	Tennessee	79°-79° 30'	39°-39° 30'	925	25
29	Nevada City:	Maryland.	121° 00' 25"-121° 03' 45"	39° 13' 50"-39° 17' 16"	11.65	50
	Nevada City:	Tennessee	121° 01' 35"-121° 05' 04"	39° 10' 22"-39° 13' 50"	12.09	
	Grass Valley:	Tennessee	120° 57' 05"-121° 00' 25"	39° 13' 50"-39° 17' 16"	11.65	
30	Banner Hill .....	California.				
	Yellowstone National Park:					
	Gallatin .....					
	Canyon .....					
	Shoshone .....	Wyoming.	110°-111°	44°-45°	3,412	75
	Lake .....					
31	Pyramid Peak .....	California.	120°-120° 30'	38° 30'-39°	932	25
32	Franklin .....	Virginia..	79°-79° 30'	38° 30'-39°	932	25
33	Briceville .....	West Va..	84°-84° 30'	36°-36° 30'	963	25
34	Buckhannon .....	Tennessee	80°-80° 30'	38° 30'-39°	932	25
35	Gadsden .....	West Va..	86°-86° 30'	34°-34° 30'	986	25
36	Pueblo .....	Alabama..	104° 30'-105°	38°-38° 30'	938	50
37	Downieville .....	Colorado..	120° 30'-121°	39° 30'-40°	919	25
38	Butte Special .....	California.	112° 29' 30"-112° 36' 42"	45° 59' 28"-46° 02' 54"	22.80	50
39	Truckee .....	Montana..	120°-120° 30'	39°-39° 30'	925	25
40	Wartburg .....	California.	84° 30'-85°	36°-36° 30'	963	25
41	Sonora .....	Tennessee	120°-120° 30'	37° 30'-38°	944	25
42	Nueces .....	California.	100°-100° 30'	29° 30'-30°	1,035	25
43	Bidwell Bar .....	Texas .....	121°-121° 30'	39° 30'-40°	918	25
44	Tazewell .....	California.	81° 30'-82°	37°-37° 30'	950	25
45	Boise .....	Virginia..	116°-116° 30'	43° 30'-44°	864	25
46	Richmond .....	Idaho .....	84°-84° 30'	37° 30'-38°	944	25
47	London .....	Kentucky.	84°-84° 30'	37°-37° 30'	950	25
48	Tennile District Special.	Kentucky.	106° 8'-106° 16'	39° 22' 30"-39° 30' 30"	55	25
49	Roseburg .....	Colorado..	123°-123° 30'	43°-43° 30'	871	25
50	Holyoke .....	Oregon ...	72° 30'-73°	42°-42° 30'	885	50
51	Big Trees .....	Mass .....	120°-120° 30'	38°-38° 30'	938	25
52	Absaroka:	Conn .....				
	Crandall .....	California	109° 30'-110°	44°-44° 30'	1,706	25
	Ishawooa .....	Wyoming.	85°-85° 30'	36°-36° 30'	963	25
53	Standingstone .....	Tennessee				

α Out of stock.

No.	Name of sheet.	State.	Limiting meridians.	Limiting parallels.	Area, in square miles.	Price, in cents.
54	Tacoma.....	Washington.	122°-122° 30'	47°-47° 30'	812	25
55	Fort Benton .....	Montana..	110°-111°	47°-48°	3, 273	25
56	Little Belt Mts....	Montana..	110°-111°	46°-47°	3, 295	25
57	Telluride .....	Colorado..	107° 45'-108°	37° 45'-38°	236	25
58	Elmoro .....	Colorado..	104°-104° 30'	37°-37° 30'	950	25

## STATISTICAL PAPERS.

Mineral Resources of the United States, 1882, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1883 and 1884, by Albert Williams, jr. 1885. 8°. xiv, 1016 pp. Price 60 cents.

Mineral Resources of the United States, 1885. Division of Mining Statistics and Technology. 1886. 8°. vii, 576 pp. Price 40 cents.

Mineral Resources of the United States, 1886, by David T. Day. 1887. 8°. viii, 813 pp. Price 50 cents.

Mineral Resources of the United States, 1887, by David T. Day. 1888. 8°. vii, 832 pp. Price 50 cents.

Mineral Resources of the United States, 1888, by David T. Day. 1890. 8°. vii, 652 pp. Price 50 cents.

Mineral Resources of the United States, 1889 and 1890, by David T. Day. 1892. 8°. viii, 671 pp. Price 50 cents.

Mineral Resources of the United States, 1891, by David T. Day. 1893. 8°. vii, 630 pp. Price 50 cents.

Mineral Resources of the United States, 1892, by David T. Day. 1893. 8°. vii, 850 pp. Price 50 cents.

Mineral Resources of the United States, 1893, by David T. Day. 1894. 8°. viii, 810 pp. Price 50 cents.

On March 2, 1895, the following provision was included in an act of Congress:

"Provided, That hereafter the report of the mineral resources of the United States shall be issued, as a part of the report of the Director of the Geological Survey."

In compliance with this legislation the following reports have been published:

Mineral Resources of the United States, 1894, David T. Day, Chief of Division. 1895. 8°. xv, 646 pp., 23 pl.; xix, 735 pp., 6 pl. Being Parts III and IV of the Sixteenth Annual Report.

Mineral Resources of the United States, 1895, David T. Day, Chief of Division. 1896. 8°. xxiii, 542 pp., 8 pl. and maps; iii, 543-1058 pp., 9-13 pl. Being Part III (in 2 vols.) of the Seventeenth Annual Report.

Mineral Resources of the United States, 1896, David T. Day, Chief of Division. 1897. 8°. xii, 642 pp., 1 pl.; 643-1400 pp. Being Part V (in 2 vols.) of the Eighteenth Annual Report.

Mineral Resources of the United States, 1897, David T. Day, Chief of Division. 1898. 8°. viii, 651 pp., 11 pl.; viii, 706 pp. Being Part VI (in 2 vols.) of the Nineteenth Annual Report.

Mineral Resources of the United States, 1898, David T. Day, Chief of Division. 1899. 8°. viii, 616 pp.; ix, 804 pp., 1 pl. Being Part VI (in 2 vols.) of the Twentieth Annual Report.

The money received from the sale of the Survey publications is deposited in the Treasury, and the Secretary of the Treasury declines to receive bank checks, drafts, or postage stamps; all remittances, therefore, must be by MONEY ORDER, made payable to the Director of the United States Geological Survey, or in CURRENCY—the exact amount. Correspondence relating to the publications of the Survey should be addressed to—

THE DIRECTOR,

UNITED STATES GEOLOGICAL SURVEY,

WASHINGTON, D. C.

WASHINGTON, D. C., May, 1900.





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## LIBRARY CATALOGUE SLIPS.

Series.

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8°. 13 pp.

Author.

Gannett (Henry).

United States geological survey | Charles D. Walcott, director | — | Altitudes in Alaska | compiled by | Henry Gannett | [Vignette] |

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8°. 13 pp.

[UNITED STATES. *Department of the interior.* (*U. S. geological survey.*)  
Bulletin 169.]

Subject.

United States geological survey | Charles D. Walcott, director | — | Altitudes in Alaska | compiled by | Henry Gannett | [Vignette] |

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Bulletin 169.]